

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		Page of Pages 1 32		
2. AMENDMENT/MODIFICATION NO. 001		3. EFFECTIVE DATE August 1, 2000		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
6. ISSUED BY Bureau of Reclamation Lower Colorado Region P.O. Box 61470 Boulder City NV 89006-1470		CODE LC-3113		7. ADMINISTERED BY (If other than Item 6)		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and ZIP code)				(T)		9A. AMENDMENT OF SOLICITATION NO. 00-SP-30-0042	
				x		9B. DATED (SEE ITEM 11) August 1, 2000	
						10A. MODIFICATION OF CONTRACT/ORDER NO.	
						10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE					

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[x] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [] is extended, [x] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(T)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT/ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. **IMPORTANT:** Contractor [] is not, [] is required to sign and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

Project Title: Unit A4 Pressure Regulating Valve Rehabilitation Hoover Dam Boulder Canyon Project Arizona

Purpose of Amendment/Modification: The purpose of this amendment is to make a minor revision to the SF1442, add dates and numbers to referenced specification in Section C, add additional wording in Section F, add a clause in Section H and add a provision at Section L.

Receipt of Offers: The date and time for receipt of offers remains 4:00 p.m., local time August 17, 2000. The place for receipt of offers remains the Bureau of Reclamation Lower Colorado Regional Office, Annex Building, Room AA-113, Nevada Highway and Park Street, Boulder City, Nevada.

Acknowledgement: See block 11 above regarding how to acknowledge this amendment. The acknowledgement must be received at the place designated for receipt of offers (see block 10 of the Solicitation, Offer, and Award, Standard form 1442).

Offer Modification: See block 11 above if you have submitted your offer and now desire to modify it or withdraw it.

(Continued on following page(s))

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	

Description of the Changes:

1. The Table of Contents has been changed to include the revisions made by this amendment.

Instructions: Remove pages, iii and iv of the Table of Contents and replace with the attached revised pages iii, iv.

2. On the Standard Form 1442 minor changes have been made to block 11. **Instructions:** Remove pages, A-1 and A-2 of the Standard Form 1442 and replace with the attached revised pages A-1 and A-2.

3. In Section C minor additions have been made to include the date or number of each referenced specification. **Instructions:** Remove pages, C-5 through C-8, C-11 through C-14, C-32 through C-37 and C-42 through C-45 of Section C and replace with the attached revised pages C-5 through C-8, C-11 through C-14, C-32 through C-37 and C-42 through C-45

4. In Section F additional wording has been added to the last paragraph in F.2. **Instructions:** Remove pages, F-1 and F-2 and replace with the attached revised pages F-1 and F-2.

5. In Section H the clause at H.5 WBR 1452.232-81 Payment for Mobilization and Preparatory Work—Bureau of Reclamation (Jul 1998) has been added. **Instructions:** Remove pages, H-3 through H-6 of Section H and replace with the attached revised pages H-3 through H-6.

6. In Section L the provision 52.222-23 has been deleted at L.1 incorporated by reference and the provision has been added at L.18 in full text. **Instructions:** Remove pages, L-16 in Section L and replace with the attached revised pages L-16 and L-17.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1	WBR 1452.201-80 Authorities and Limitations--Bureau of Reclamation (Jul 1993)	G-1
G.2	WBR 1452.232-903 Invoice Submission Requirements--Bureau of Reclamation-- Lower Colorado Region (Nov 1996)	G-2
G.3	WBR 1452.242-80 Postaward Conference--Bureau of Reclamation (Jul 1993)	G-3
G.4	WBR 1452.242-900 Government Administration Personnel--Bureau of Reclamation-- Lower Colorado Region (Jul 1998)	G-3
G.5	WBR 1452.242-901 Contractor's Administration Personnel--Bureau of Reclamation-- Lower Colorado Region (Jul 1998)	G-3
G.6	WBR 1452.242-902 Contractor's Payment Personnel--Bureau of Reclamation-- Lower Colorado Region (Nov 1996)	G-4
G.7	WBR 1452.243-80 Modification Proposals -- Bureau of Reclamation (Feb 2000) Alternate III (Jul 1998)	G-4

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1	WBR 1452.209-82 Prohibition on Release of Information--Bureau of Reclamation-- Lower Colorado Region (Jul 1997)	H-1
H.2	52.211-6 Brand Name or Equal (Aug 1999) (Deviation)	H-1
H.3	WBR 1452.223-81 Safety and Health--Bureau of Reclamation--Lower Colorado Region (Jul 1998) Alternate I (Jul 1998)	H-3
H.4	WBR 1452.223-900 Safety Data Submittal Requirements--Bureau of Reclamation-- Lower Colorado Region (Nov 1996)	H-4
H.5	WBR 1453.232-81 Payment for Mobilization and Preparatory Work--Bureau of Reclamation (Jul 1998)	H-4

Part II - Contract Clauses

SECTION I - CONTRACT CLAUSES

I.1	52.252-2 Clauses Incorporated by Reference (Feb 1998)	I-1
	52.202-1 Definitions (Oct 1995) Alternate I (Apr 1984)	I-1
	52.203-3 Gratuities (Apr 1984)	I-1
	52.203-5 Covenant Against Contingent Fees (Apr 1984)	I-1
	52.203-7 Anti-Kickback Procedures (Jul 1995)	I-1
	52.203-8 Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (Jan 1997)	I-1
	52.203-10 Price or Fee Adjustment for Illegal or Improper Activity (Jan 1997)	
	52.203-12 Limitation on Payments to Influence Certain Federal Transactions (Jun 1997)	I-1
	52.204-4 Printing/Copying Double-Sided on Recycled Paper (Jun 1996)	I-1
	52.209-6 Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (Jul 1995)	I-1

52.215-2	Audit and Records--Negotiation (Jun 1999)	I-1
52.215-8	Order of Precedence-Uniform Contract Format (Oct 1997)	I-1
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data--Modifications (Oct 1997) Alternate IV (Oct 1997)	I-1
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns (Jan 1999)	
52.219-8	Utilization of Small Business Concerns (Oct 1999)	I-1
52.222-3	Convict Labor (Aug 1996)	I-1
52.222-4	Contract Work Hours and Safety Standards Act--Overtime Compensation (Jul 1995)	I-1
52.222-6	Davis-Bacon Act (Feb 1995)	I-1
52.222-7	Withholding of Funds (Feb 1988)	I-1
52.222-8	Payrolls and Basic Records (Feb 1988)	I-1
52.222-9	Apprentices and Trainees (Feb 1988)	I-1
52.222-10	Compliance with Copeland Act Requirements (Feb 1988)	I-1
52.222-11	Subcontracts (Labor Standards) (Feb 1988)	I-1
52.222-12	Contract Termination-Debarment (Feb 1988)	I-1
52.222-13	Compliance with Davis-Bacon and Related Act Regulations (Feb 1988)	I-2
52.222-14	Disputes Concerning Labor Standards (Feb 1988)	I-2
52.222-15	Certification of Eligibility (Feb 1988)	I-2
52.222-21	Prohibition of Segregated Facilities (Feb 1999)	I-2
52.222-26	Equal Opportunity (Feb 1999)	I-2
52.222-27	Affirmative Action Compliance Requirements for Construction (Feb 1999)	I-2
52.222-35	Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (Apr 1998)	I-2
52.222-36	Affirmative Action for Workers with Disabilities (Jun 1998)	I-2
52.222-37	Employment Reports on Disabled Veterans and Veterans of the Vietnam Era (Jan 1999)	I-2
52.223-3	Hazardous Material Identification and Material Safety Data (Jan 1997) Alternate I (Jul 1995)	I-2
52.223-5	Pollution Prevention and Right-to-Know Information (Apr 1998) .	I-2
52.223-6	Drug-Free Workplace (Jan 1997)	I-2
52.223-14	Toxic Chemical Release Reporting (Oct 1996)	I-2
52.225-13	Restrictions on Certain Foreign Purchases (Feb 2000)	I-2
52.227-1	Authorization and Consent (Jul 1995)	I-2
52.227-4	Patent Indemnity--Construction Contracts (Apr 1984)	I-2
52.228-2	Additional Bond Security (Oct 1997)	I-2
52.228-5	Insurance--Work on a Government Installation (Jan 1997)	I-2
52.228-11	Pledges of Assets (Feb 1992)	I-2
52.228-12	Prospective Subcontractor Requests for Bonds (Oct 1995)	I-2
52.228-14	Irrevocable Letter of Credit (Dec 1999)	I-2
52.228-15	Performance and Payment Bonds--Construction (Sep 1996) . . .	I-2

SECTION A - SOLICITATION, OFFER, AND AWARD (Standard Form 1442)

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE	OF	PAGES
	00-SP-30-0042	<input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	JULY 17, 2000	1		91
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.						
4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO.			
7. ISSUED BY		CODE	8. IF MAILED BY U.S. POSTAL SERVICE (USPS), ADDRESS OFFER TO			
Bureau of Reclamation Lower Colorado Region P.O. Box 61470 Boulder City NV 89006-1470		LC-3113	Bureau of Reclamation Lower Colorado Region P.O. Box 61470 (Attn: LC-3113) Boulder City NV 89006-1470			
		IF OFFER MAILED BY OTHER THAN USPS, SEE MAILING INSTRUCTIONS IN ITEM 10.				
9. FOR INFORMATION CALL:	A. NAME		B. TELEPHONE NO. (NO COLLECT CALLS)			
	Paula Cerda		(702) 293-8527			

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS:

00-SP-30-0042-Unit A4 Pressure Regulating Valve, Lower Colorado Dams Facilities Office, Boulder Canyon Project, Arizona.

Offers will be received by the Bureau of Reclamation at the Lower Colorado Regional Office, Annex Building, Room AA-113, Nevada Highway & Park Street, Boulder City, Nevada.

Express-mailed offers should be addressed to the Bureau of Reclamation, Lower Colorado Regional Office, Attention: LC-3113, 400 Railroad Avenue, Boulder City, Nevada 89005. Offers mailed via the United States Postal Service should be mailed at least 5 days prior to the date offers are due and addressed as indicated in item 8 above.

Hand-carried offers should be delivered to the Bureau of Reclamation, Lower Colorado Regional Office, Nevada Highway and Park Street, Annex Building, Room AA-113, Boulder City, Nevada.

Estimated Cost Range of this Project: \$250,000 to \$500,000.

11. The Contractor shall begin performance within <u>15</u> calendar days and complete it within <u>See Section F.2</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable.	
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	15

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Offers are due at 4:00 on AUGUST 17, 2000. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☐ is, ☒ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

requirements of these specifications or of the responsibility for the correctness of the Contractor's drawings.

e. Addresses - The Contractor shall send the submittals to the applicable addresses listed below as required by table C1.

The Contractor shall also send a copy of the transmittal letter to each of the addresses listed below that are not sent the submittal.

Submittals shall be sent as required by table C1 to:

- (1) Contracting Officer, USBR-Lower Colorado Region
Attention: LC-3130
P.O. Box 61470
Boulder City, NV 89006-1470
- (2) Regional Engineer, USBR-Lower Colorado Region
Attention: LC-6000
P.O. Box 61470
Boulder City, NV 89006-1470
- (3) TSC, mail to:
Bureau of Reclamation
Attn D-8160 Engineering Services
P.O. Box 25007
Denver CO 80225

f. Cost - Unless otherwise specified, no separate payment will be made for preparing and furnishing submittals to the Government, and the cost thereof shall be included in the prices bid in the schedule for the applicable items of work requiring the submittals or other items of work.

Table C1 - List of submittals

RSN	Item	Reference provision, clause, or paragraph	Responsible code	Submittals required	No. of sets to be sent to:*			Due date or delivery time
					RE	CO	TSC	
001	Bonds	52.228-15	CO	Performance and Payment Bonds	0	1	0	Within 15 calendar days of contract award.
002	Safety Data	WBR 1452..223-81	CO	Experience Modification Rate for Worker's Compensation Insurance; Log and Summary of Occupational Injuries and Illnesses; death and lost workday severity incidence rate	0	1	0	Within 20 calendar days of contract award.
003	Safety and Health	WBR 1452.223-81	RE	Safety program	$\frac{4}{3}$	0	0	Submitted and accepted before commencing onsite work.
004	Insurance - work on a Government Installation.	52.2285	CO	(1) Written certification that the required insurance has been obtained. (2) Current certification of insurance for each subcontractor.	0	1	0	Before commencing onsite work under the contract At least 5 days before entry of subcontractor's personnel on the Government Installation.
005	Liability Insurance	DOI 1452.228-70	CO	Acceptable evidence showing that insurance has been obtained.	0	1	0	Prior to commencement of work under this contract.
006	Accident prevention	52.236-13	CO	Accident exposure data.	0	1	0	Prior to commencement of onsite work under this contract.
007	Payment (electronic funds transfer)	52.232-34	CO	Payment Information	0	1	0	After award, but no later than 14 days before an invoice or contract financing request is submitted.
008	Release of Claims.	DOI 1452.204-70	CO	Release of claims (DI-137) against the United States.	$\frac{4}{3}$	1	0	After completion of the work and prior to final payment.
009	Subcontracts	52.222-11	CO	(1) List of subcontract. (2) Statement and Acknowledgment Form (SF 1413) for each subcontract.	$\frac{4}{3}$	1	0	Within 14 days after award of contract and within 14 days after award of an subcontracts.

RSN	Item	Reference provision, clause, or paragraph	Responsible code	Submittals required	No. of sets to be sent to:*			Due date or delivery time
					RE	CO	TSC	
M1	Pressure gages	C.6.3.e.(1)	RE	catalog sheet	+ 3	0	1	Within 90 calendar days after receipt of Notice of Award
M2	Pre-shutdown test procedure and equipment list	C.6.4.e.(1)	RE	procedure	+ 3	0	1	10 calendar days prior to testing
M3	Disassembly and rehabilitation	C.6.5.e.(1) & (2)	RE	a) schedule b) procedures	+ 3	0	1	Within 90 calendar days after receipt of Notice of Award
M4	Report of pre-shutdown testing, dimensions and conditions	C.6.3.e.(2) C.6.4.e. (2), (3) & (4) C.6.5.e.(3)	RE	Data sheets, strip charts test assessment	+ 3	0	1	Within 5 calendar days after testing
M5	All critical components	C.6.6.b. & c.	RE	Purchase orders	+ 3	0	1	When issued
M6	All critical components	C.6.6.b. & c.	RE	NDE reports	+ 3	0	1	Prior to shipment
M7	All critical components	C.6.6.b. & c.	RE	As-shipped dimensions	+ 3	0	1	15 days after shipment
M8	Control Valve; Operating Linkage; Dashpot and Cover; Main Piston; Main Disc, seats	C.6.7.c.(1) C.6.8.d.(1) C.6.9.d.(1) C.6.10.e.(1) C.6.11.d.(1)	RE	Examination reports and requests for disposition	+ 3	0	1	Within 5 calendar days after disassembly
M9	Control Valve; Operating Linkage; Dashpot and Cover; Main Piston; Main Disc, seats	C.6.7.c.(2) C.6.8.d.(2) C.6.9.d.(2) C.6.10.e.(2) C.6.11.d.(2)	RE	Deviation reports and repair procedures	+ 3	0	1	Within 20 calendar days after disassembly
M10	Control Valve; Operating Linkage; Dashpot and Cover; Main Piston; Main Disc, seats	C.6.7.c.(3) C.6.8.d.(3) C.6.9.d.(3) C.6.10.e.(3) C.6.11.d.(3)	RE	Clearances of rehabbed components	+ 3	0	1	Before dry run testing
M11	PRV Body, Control Valve and Energy dissipaters	C.6.12.d.(1)	RE	Examination Report and Cavitation Mapping	+ 3	0	1	Within 5 days of mapping
M12	PRV Body, Control Valve and Energy dissipaters	C.6.12.d.(2)	RE	Repair plan and weld repair procedures	+ 3	0	1	20 days prior to starting weld repair operations
M13	Operational Testing of PRV	C.6.13.c.(1)	RE	Procedures	+ 3	0	1	30 calendar days prior to start of Phase 1 testing
M14	Phase 1 PRV testing, Dimensions	C.6.13.c.(2)	RE	Reports	+ 3	0	1	Before Phase 2 testing
M15	Phase 2 PRV testing, Dry-run testing of PRV	C.6.13.c.(3)	RE	Reports	+ 3	0	1	Before Phase 3 testing
M16	Phase 3 PRV testing, Manual operation testing of PRV	C.6.13.c.(4), (5) and (6)	RE	Reports	+ 3	0	1	Before Phase 4 testing

RSN	Item	Reference provision, clause, or paragraph	Responsible code	Submittals required	No. of sets to be sent to:*			Due date or delivery time
					RE	CO	TSC	
M17	Phase 4 PRV testing, Load rejection operational testing of PRV	C.6.13.c.(7)	RE	Reports	4 3	0	1	10 calendar days after completion of Phase 4 testing.

* CO indicates Contracting Officer, RE indicates Regional Engineer, and TSC indicates Denver Office. For mailing addresses, see subparagraph e., "Addresses", of paragraph C.1.3., "SUBMITTAL REQUIREMENTS."

C.1.4 Handling and Disposal of Lead Contaminated Materials

a. General - The pressure regulating valve to be disassembled and refurbished has been painted with lead-based paints and primers. The interior water passages and exterior surfaces of the valve require coating removal and re-coating. The required environmental precautions shall be exercised prior to working on these items.

b. Disturbing of paint - The collection and containment of the lead-based paint separated from the equipment, or any paint stripping materials, shall be in accordance with the requirements noted below. Under no circumstances will burning of the painted surfaces be allowed.

c. Lead Abatement Program - The Contractor's work shall conform to the OSHA general industry lead standard, 29 CFR 1926.62. The Contractor shall develop and implement a Lead Abatement Program (LAP). As required by paragraph C.1.3., Submittal Requirements, the Contractor shall submit the LAP for approval by the Regional Engineer 60 days prior to start of work at site. The LAP shall have at least the following elements:

(1) Worker Safety and Protection Program - the Contractor shall submit and implement a plan for a site-specific worker safety and protection program to minimize lead exposure. All on-site workers shall be familiar with the safety program and shall be given training on its contents. The plan shall be available on the site for inspection by employees and regulatory personnel. As a minimum, this plan shall include the following:

- (a) Engineering controls and good worker practice.
- (b) Medical surveillance.
- (d) Protective clothing and equipment to be utilized.
- (e) Respiratory protection program.
- (f) Exposure monitoring and sampling.
- (g) Record keeping.
- (h) Hygiene facilities and practices.
- (i) Employee training and certifications.

SUBSECTION C.2 - MATERIALS AND WORKMANSHIP

C.2.1 Materials

a. General - The words "materials" and "material" as used in the contract to denote items required to be furnished by the Contractor shall be construed to mean equipment, machinery, product, component, or any other item procured under the contract. Unless otherwise stated in the contract, materials used in the manufacture of the equipment shall be new and of the highest standard commercial quality as normally used for this type of equipment, considering strength, ductility, durability, best engineering practice, and the purpose for which the equipment is to be used.

Unless otherwise specified, materials used in the manufacture of the equipment shall conform to the applicable specifications of ASTM, ANSI or SAE. If the Contractor for justifiable cause proposes to deviate from — or to use materials not covered by ASTM, ANSI or SAE shall state the reasons for — and the exact nature of — the deviation, and shall submit for the approval of the Contracting Officer complete specifications for the materials that the Contractor proposes to use.

Parts shall be made accurately to standard gauge where possible so as to facilitate replacement and repair. Bolts, nuts, screws, taps, pipes, and pipe fittings shall have unified screw threads conforming to ANSI B1.1(1989) and B1.20.1(1992). For internal connections of individual items of equipment only, the Contractor will be permitted to deviate from ANSI, provided that the Contractor furnishes a complete set of all such necessary taps and dies which might be required by the Government to facilitate repair or replacement.

Contractor shall clean-up and re-use all serviceable, non-wet environment fasteners. Fasteners that are subject to water exposure either continuously or infrequently shall be replaced. All new fasteners shall be permanently marked with a symbol identifying the manufacturer and with symbol(s) indicating grade, class, type, and other identifying marks in accordance with referenced or applicable standards.

The word "Code" as used in this paragraph, refers to Section VIII of the ASME Boiler and Pressure Vessel Code (1998), including modifications made by addenda and by approved code cases.

Electrical materials and equipment shall conform to the requirements of the applicable standards of the American National Standards Institute, Institute of Electrical and Electronics Engineers, Inc., and/or National Electrical Manufacturers Association.

b. Unit Stresses - Liberal factors of safety and adequate shock-absorbing features shall be used throughout the designs and especially in the design of all parts subject to stresses or shock,

including alternating- and vibrating-type stresses and shock. Shock-absorbing features shall include provisions which prevent components from loosening.

Materials for parts subject to stress due to hydraulic pressure, and materials for other principal stress-carrying parts shall conform to specifications permitted by the Code or to specifications of the American Society for Testing and Materials, provided that if materials conforming to ASTM specifications are used, the materials shall be suitable for the intended use and equal to corresponding Code materials as determined by the Contracting Officer. Upon request from the Contracting Officer, the Contractor shall furnish design calculations and complete information as to the maximum unit stresses used in the design.

The following design conditions shall be met:

(1) Allowable unit stresses under normal operating conditions - Parts subject to the water pressure resulting from the maximum head plus the design value for water hammer shall be designed for a hydrostatic pressure of 280 pounds per square inch. Other parts shall be designed for the most severe normal operating conditions, including load rejection or short circuit at machine terminals. Under the conditions specified above, the unit stress shall conform to the following requirements.

(a) For materials permitted by the Code, or for materials conforming to specifications of the American Society of Testing and Materials corresponding to the Code Specifications, when approved, the unit stresses shall not exceed those allowed by the Code.

(b) For materials conforming to other specifications, the maximum allowable unit stress shall be determined on the same basis as was used in establishing the maximum allowable unit stress values specified in the Code, which basis is described therein.

(c) For other materials, the unit stresses shall not exceed one-third of the yield point nor one-fifth of tensile strength of the material.

(2) Allowable unit stresses under abnormal conditions - Unit stresses higher than those permitted by subparagraph (c) above, but not to exceed the two-thirds of the yield point, will be permitted for the initial pre-stress of bolts.

c. Specific materials shall be as specified in the technical paragraphs.

The Contractor shall send the Contracting Officer, upon his request, a copy of each mill or shop order for material purchased by the Contractor for use in the fabrication of PRV components. The copies of the orders shall state the place at which the material is to be manufactured. All

such mill or shop orders shall quote the requirements of the special conditions and drawings for articles, materials, and supplies to be furnished.

d. Centrifugal Castings.--

(1) Certificates showing the results of the ladle analysis shall be furnished to the Contracting Officer. The casting shall be heat treated.

(2) Repairs shall not be made to castings without the approval of the Contracting Officer. Repairs shall not be made to castings when the defect, properly prepared for welding, exceeds 15 percent of the wall thickness of the final part or one inch, whichever is smaller. Welds shall be stress relieved in accordance with the material ASTM specification. When the Contracting Officer consents to the repair of castings by welding, the Contracting Officer may require radiographic, dye penetrant, or other nondestructive inspection to determine the adequacy of the repairs.

C.2.2 Workmanship

All work shall be performed and completed in a thorough, workmanlike manner and shall follow the best modern practice in the manufacture of high-grade machinery, notwithstanding any omissions from the contract. All work shall be performed by craftsmen skilled in their various trades. All parts shall be made accurately to standard gauge so as to facilitate replacement and repairs.

C.2.3 Welding

a. General - Welding shall be performed by the electric-arc method by a process that excludes the atmosphere from the molten metal, and where practicable, by automatic machines. Machined surfaces of parts affected by welding shall be machined to final dimensions after welding. Machined surfaces of parts requiring stress-relief shall be machined to final dimensions after the parts have been stress-relieved.

b. Design and fabrication - Unless otherwise provided, the design and fabrication of all welded parts shall conform to the following requirements:

(1) Principal stress-carrying parts - The design and fabrication of welded parts subject to stress due to hydraulic pressure and of other principal stress-carrying parts shall be in accordance with Part UW of Section VIII of ASME Boiler and Pressure Vessel Code (1998), with the following exceptions:

(a) Localized stress-relieving will not be permitted for shop-welded parts.

(b) Stress-relieving of field-welded joints will not be required.

(c) Where required under the Code or under this solicitation, welded joints shall be inspected by a non-destructive method approved by the Contracting Officer.

(2) Less important parts - The fabrication of less important parts shall be in accordance with the Standard Code for Arc and Gas Welding in Building Construction of AWS D1.1 2000. Stress-relieving of above parts will not be required.

c. Welding qualifications - The qualification of welding procedures, welders, and welding operators shall conform to the requirements of Section IX of ASME Boiler and Pressure Vessel Code (1998).

Non-destructive examination personnel shall be qualified in accordance with the applicable method of the American Society for Nondestructive Testing Recommended Practice No. SNT-TC-1A 1996, or have equivalent qualifications.

C.2.3 Reference Specifications and Standards

Materials, Contractor design, construction work, and other requirements which are specified by reference to Federal Specifications, Federal Standards, or other standard specifications or codes shall comply with the editions or revisions listed. In the event of conflicting requirements between a referenced specification, standard, or code and these specifications, these specifications shall govern.

In the event that materials are not covered by Federal or other specifications, the materials furnished shall be of standard commercial quality.

Copies of Federal Specifications and standards may be obtained from GSA Federal Supply Service Bureau. See the provision at FAR 52.211-1, "Availability of Specifications Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29." Many of the Federal Specifications and Standards may be examined at the Bureau of Reclamation Denver Office Library, building 67, Denver Federal Center, West 6th Avenue and Kipling Street, Denver, Colorado.

Bureau of Reclamation Standard Material Specifications and Methods of Tests (The M-series documents) may be obtained from the Bureau of Reclamation, Attn D-8170, PO Box 25007, Denver CO 80225-0007, telephone (303) 445-3082.

Other Reclamation publications; including manuals and Reclamation's significant scientific, technical, and engineering works; are available from the National Technical Information Service

and the crosshead to PRV connecting rod with the turbine gallery crane. See Drawing No. 2 816 287. The Government anticipates removal of the crane rail on November 1, 2000.

Disassembly will begin at the turbine end of the rod connection to the turbine shift ring and the forked head at the adjustable lever. Ref Drawings (02-501-027 and 02-201-031). With the two ends disconnected the cross head slides out either end and the rods can then be disconnected from the crosshead assembly. The Government will perform this part of the PRV disassembly as part of their own turbine disassembly work.

The following describes the disassembly to the best knowledge of the Government. The Contractor disassembly will begin with removal of the adjustable lever from the end of the double lever, as well as the yoke connecting rods. The bearing caps for the double lever are now removed and the double lever removed. The nut on the top of dashpot piston rod holds the yoke on and can be removed. Removing the upper control valve lever and unbolting the dashpot cover allows the dashpot cover and piston to be removed. Dashpot oil should be removed and the valve cover jacked up about 19 inches to gain access to the jaw coupling. To disassemble the main piston the jaw coupling assembly between the dashpot and the main piston has to be disconnected. This operation requires the disc to be closed and the top cover raised by the dashpot stroke of 19 inches. With the disc closed and blocked from below the auxiliary chamber can be isolated and drain valve opened. Remove the position indicator column and the supporting rod assembly, both are attached to the top of the main piston. With the top cover raised, access is available to the jaw coupling. Nuts holding the dashpot cylinder to the jaw coupling can be removed and the dashpot assembly and top cover can be removed.

With the top cover removed the screw threads to the main compression screw are visible. Thread a nut and tighten to compress the main spring. With the main spring compressed the keyway pin can be removed from the top of the main piston. The jaw coupling can now rotate 90° and be removed together with the compressed spring. Extreme care should be taken with the compressed spring.

The locking ring under the disc can be removed. With the disc still blocked, the disc spindle and main piston can be lifted out of the guides leaving the disc blocked and closed. The piston guide 02-500-871 can be unbolted from the body and removed. The disc should be supported from above, blocking removed and the disc lowered to the supports and the valve seat assembly removed from the valve body. The disc can now be removed. The control valve assembly and levers can be removed at any time.

d. Component Weights.-

Connecting Rod to Shifting Ring	02 300 663	----	2640 pounds
Crosshead and Guide	02 300 662	----	3400 pounds

Connecting rod to PRV	02 500 903	----	5000 pounds, heads, pins and rod
Adjustable lever Assembly	02 816 290	----	4850 pounds, lever, adjusting block and pins
Double lever	02 816 286	----	10,075 pounds
Yoke and connecting rods	02 816 289	----	3150 pounds
Top Cover Assembly	02 816 283	----	22,850 pounds
Bearing caps	02 816 283	----	approx. 1400 pounds each

e. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):

- (1) Schedule of disassembly, rehabilitation and reassembly.
- (2) Procedure for disassembly, rehabilitation and reassembly.
- (3) Check sheets documenting teardown dimensions.

f. Payment.- Payment for disassembly of the PRV will be included in the lump-sum price bid therefore in the schedule, Item 4 for disassembling of the PRV, which price shall include all labor, materials and equipment necessary to disassemble the PRV and removing the components for rehabilitation from the Powerplant.

C.6.6 Furnishing Critical Components

a. General.- Replacement parts of critical components of the PRV shall be fabricated for possible installation into the PRV. Due to the potential for damage and corrosion the fabricated parts shall be rough finished and final machined after disassembly of the valve and inspection of the mounting surfaces.

b. Components.-- If clearances between existing components are within drawing specifications and damage from contact or erosion is minimal and repairable, then existing components can be reused and the new, fabricated parts will be turned over to the Government for use in other units. Springs will be replaced regardless of existing condition. If cleanup or repair is necessary to the mounting surfaces of the valve piston body, or spindle, the final dimensions of the replacement parts will be adjusted by the Contractor to reflect the new dimensions. Any components not used during the rehabilitation shall be turned over to the Government's representative at the Government Warehouse, Hoover Dam, labeled, tagged and boxed or skid mounted for outdoor storage. The following components shall be furnished by the contractor and shall be available to the contractor for replacement of damaged or out of tolerance existing components.

- (1) Bushing, lower piston, sliding surface, control valve, 02-200-831 is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from

ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(2) Seat, lower piston, control valve 02-200-817 is a forged 18-8 stainless steel, alloy 302, nitrided for hardness. Replacement parts shall be machined from cast ASTM-A743-98 UNS-J92600 or forged ASTM-A-743-98 S30400, Brinell hardness 200. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts. Final machining of the seat shall be to match the repaired receiving components.

(3) Bushing, upper piston, sliding surface, control valve, 02-500-918 (5) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(4) Control valve tip and seal 02-500-918 (4) and 02-200-816 shall be an integral piece, centrifugally cast and machined from A271-96 UNS C95500 in accordance with USBR Drawing No. 45 - D - 19578.

(5) Bushing, auxiliary chamber guide, main piston, 02-500-871 (3) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(6) Bushing, auxiliary chamber sleeve, main piston, 02-816-282 (4) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(7) Bushing, lower auxiliary chamber/spindle guide, main piston, 02-500-871 (4) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(8) Bushing, lower auxiliary chamber/spindle sleeve, main piston, 02-816-279 (5) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(9) Bushing, lower spindle guide, main piston, 02-817-254 (36) is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM

B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(10) Bushing, lower spindle sleeve, main piston, 02-816-279 is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

(11) Seat, Disc, stationary 02-816-280 (13) is a forged 18-8 stainless steel, alloy 302, nitrided for hardness. Replacement parts shall be machined from cast ASTM-A743-98 UNS-J92600 or forged ASTM-A-743-98 S30400, Brinell hardness 200. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts. Final machining of the seat shall be to match the repaired receiving components.

(12) Seat, Disc, moving 02-816-280 (14) is a forged 18-8 stainless steel, alloy 302, nitrided for hardness. Replacement parts shall be machined from cast ASTM-A743-98 UNS-J92600 or forged ASTM-A-743-98 S30400, Brinell hardness 200. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts. Final machining of the seat shall be to match the repaired receiving components.

(13) Ring, Facing, stationary 02-816-280 (1) is a forged steel 1040 Replacement part shall be machined from ASTM B271-96 UNS C95500, Aluminum-Bronze. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts. Final machining of the ring shall be to match the repaired receiving components.

(14) Bushing, Main cylinder, main piston, 02-300-652 is currently a high leaded tin bronze, equivalent to alloy ASTM B763-98 UNS C93700. Replacement part shall be machined from ASTM B271-96 UNS C93700. Rough machining shall provide sufficient excess material to allow a cleanup cut or repair to the receiving parts.

Spring specifications:

(15) Compression spring, main piston 02-842-314, item 6 One required
Helical wound round steel spring wire, 2.250 inch diameter wire, 8 1/4 inch mean diameter, 8 1/2 active coils, about 10 1/2 total coils, 28 inch free length, 24 inch solid height (max), 7700 lbs/inch deflection rate, maximum load ,26000 pounds, ends closed and ground square.

The dashpot piston incorporates three springs, two for the check valves and one for the plunger/re-close valve. All three springs will be replaced in accordance with the spring specifications. A new plunger valve spring shall be fabricated in accordance with drawing 02-816-288 (11) and two check valve springs shall be fabricated in accordance with 02-851-675 (5).

(16) Reclose valve spring, dashpot piston 02-816-288 item 11 One required.
Spring steel, 0.250 inch diameter, 1 3/8 inch mean diameter, 13 active coils, about 14 1/2 total coils, 5 1/2 inch free length, 3 5/8 inch solid height, 160 lbs/inch deflection rate, ends closed and ground square.

(17) Check valve spring, dashpot piston 02-851-675 item 5 Two required.
Spring steel, 0.135 inch diameter #10 gauge, 1 inch mean diameter, 19 active coils, about 21 total coils, 5 inch free length, 2 7/8 inch solid height, 25 lbs/inch deflection rate, ends closed and ground square.

Summary of Critical Components to be Furnished

Description	Drawing No	Item No	Material
Bushing, 13.5" piston, sliding guide, Control valve	02-200-831		ASTM B271-96 UNS C93700 Bronze
Valve seat, 14.5" Control valve	02-200-817		ASTM A743-98 Stainless 304
Upper Piston sliding ring Control Valve	02-500-918	5	ASTM B271-96 UNS C93700 Bronze
Piston Tip, plus seal ring Control Valve	45-D-19578	4	ASTM B271-96 UNS C95500 Aluminum- Bronze
Guide, 30" OD Main piston	02-500-871	3	ASTM B271-96 UNS 93700 Bronze
Guide, 18" ID Main Piston	02-500-871	4	ASTM B271-96 UNS 93700 Bronze
Sleeve, 30" sliding Main Piston	02-816-282	4	ASTM B271-96 UNS 93700 Bronze
Guide, 14.5" ID Main Piston, lower	02-817-254	36	ASTM B271-96 UNS 93700 Bronze
Guide, 14.5" OD sliding Spindle	02-816-279	3	ASTM B271-96 UNS 93700 Bronze
Guide, 18" OD , sliding Spindle at auxiliary chamber	02-816-279	5	ASTM B271-96 UNS 93700 Bronze

Description	Drawing No	Item No	Material
Cylinder, 71" ID Main Piston	02-300-652		ASTM B271-96 UNS 93700 Bronze
Disc seat, 60" ID, fixed forged	02-816-280	13	A743-98 Stainless 304
Disc seat, 57" ID, moving, forged	02-816-280	14	A743-98 Stainless 304
Facing Ring, for stationary seat 66" OD	02-816-280	1	ASTM B271-96 UNS C95500 Aluminum- Bronze

c. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):

- (1) Purchase Orders of critical components with drawings used for purchase.
- (2) NDE reports with defect mapping
- (3) Dimensional report of as shipped component dimensions

d. Payment.- Payment for critical components will be included in the lump-sum price bid therefore in the schedule, Item 5, for which price shall include all labor, materials and equipment necessary to furnish and delivery of centrifugal castings, stainless steel castings and forgings, aluminum bronze castings and springs.

C.6.7 REHABILITATION OF PRV CONTROL VALVE

a. General.--The 13-inch-diameter control valve functions as the pilot operator for the main piston. The main piston is held up (disc closed) until the pilot valve releases pressure from the underside of the main piston. When pressure below the main piston is released, the pressure above the disc moves the disc down and releases the flow from the turbine. The control valve is itself pilot operated with the valve stem opening the vent and then the pilot piston will move up and open the regulator route for the main valve. Drawing 02-500-916 shows the assembly of the control valve. The control valve shall be disassembled and inspected for wear, corrosion, damage and any other abnormal conditions that may affect the reliability and or serviceability of the control valve. As a minimum all packings and gaskets shall be replaced and sliding surfaces honed, set screws and screws to lock bushings into position shall be replaced, the rehabilitated control valve shall be retested for leakage. Critical sealing surfaces (rings and seats) shall be fabricated and available for replacement. Components to be fabricated will include 02-200-831, 02-200-817, and 02-500-918 (5). See Paragraph C.6.6, Furnishing Critical Components. Control valve tip and seal shall be fabricated as an integral piece in accordance with USBR Drawing No. 45-D-19578. If clearances of the existing components are within drawing specifications, the

Rings and glands shall be examined for damage and all packings shall be replaced including at the following locations:

- indicator column
- supporting column
- main piston 71-inch-diameter
- spindle guides 30-inch, 18-inch, 14.5-inch-diameter

Rubber seal rings were provided to prevent seepage between mating parts and shall be replaced.

d. Materials- Specifications for the existing PRV materials are given in the drawings. Drawings indicate the spindle is forged steel, piston is cast steel, current designation would be similar to ASTM A27-95, 71 inch diameter cylinder is Ampco A3 (ASTM B148-97 UNS C95300) and the spindle guides are ASTM B763-98 UNS C93700. If the exact composition of the material is required for development of a repair procedure, the Contractor shall perform a chemical analysis of a small sample of the PRV component being rehabilitated.

e. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):

- (1) Examination reports of damage and corrosion of components and as found clearance measurements
- (2) Deviation reports and repair procedures, if necessary
- (3) Clearances of rehabilitated components

f. Payment.- Payment for rehabilitation of the main piston of the PRV will be included in the lump-sum price bid therefore in the schedule, Item 9, which price shall include all labor, materials and equipment necessary for disassembly, cleaning, examination, rehabilitation and measurements of the main piston.

C.6.11 REHABILITATION OF MAIN DISC, BODY SEAT , PRV

a. General.--The 60-inch-diameter main disc is the primary closure device. Stationary seals and seals on the disc shall be examined and sealing surfaces replaced or repaired.

b. Rehabilitation.-The disc has a nitrided stainless steel seal ring and is opposed by a body seal ring of the same material. The facing ring is a forged ASTM 1040-42, saw cut before installation and then the joints welded in place. The contractor shall rehabilitate the surfaces by overlay welding or install the replacement rings to restore the sealing surfaces and facing ring to as-new dimensions and finish.

c. Replacement.- The facing ring and seal rings shall be removed and the mounting metal examined for corrosion or other damage. A new valve body seal and a new disc seal ring shall be fabricated and available for installation. Drawing 02-816-280 items 13 and 14. The facing ring 02-816-280, item 1, shall be fabricated and available for installation. New fasteners shall be installed into the facing ring and ground flush. Disc seals shall be ground to provide a tight seal when disc is in closed position.

d. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):

- (1) Examination reports of damage and corrosion of components and as found clearance measurements
- (2) Deviation reports and repair procedures, if necessary
- (3) Clearances of rehabilitated components

e. Payment.- Payment for rehabilitation of main disc will be included in the lump-sum price bid therefore in the schedule, Item 10, which price shall include all labor, materials and equipment necessary for examination, cleaning, disassembly of disc seals and facing plate, rehabilitation or replacement of seals and final measurements of seal clearances

C.6.12 REPAIRING CAVITATION/CORROSION DAMAGE TO PRV BODY, CONTROL VALVE BODY AND ENERGY DISSIPATERS

a. General.-- The Contractor shall repair cavitation/corrosion pitting damage to the PRV body, control valve body and energy dissipaters. The contractor shall restore the PRV, control valve and energy dissipaters within the water passages to a hydraulically smooth condition as shown on Allis Chalmers drawings No. 02-500-870, 02-816-298, 02-817-254 and 02-500-916 .

b. Cavitation damage examination.-- The Contractor shall provide a checklist to ensure that all parts of the PRV are inspected and that all areas of cavitation damage are recorded on sketches or in tabular form prior to repairing the damage. The chamber shall be divided in zones or quadrants and damage report locations shall refer to those zones.

The records shall include the following:

- (1) Date of examination
- (2) Overall area of pitting, as well as the average depth and maximum depth.
- (3) Dimensions and locations of structural damaged areas
- (4) Digital photographs of the damaged area and of subsequent repairs. Reference number and dimension of pitted area shall be marked and visible in the digital photo. (.Jpg or .bmp format)

In addition, the Contractor shall also check for corrosion, cracks, or other damage. The Contractor shall notify the Government of any flaws or damage when found.

c. Plan and repair method.-- The contractor shall perform an examination and assessment of the damage of the PRV and submit a recommended plan and method for repairing the damage to original conditions. Weld metal used to repair PRV components shall be 309L for steel repair in the area from the disk to 6 feet below the disk, carbon steel rod for repair in the lower areas of the energy dissipaters and Ampco -Trode 10 for repair of Bronze alloys. Specifications for the PRV materials are given in the drawings, drawings indicate the valve body is QQ-S-681b class 2 cast steel (Obselete). If the exact composition of the material is not known, the Contractor shall perform a chemical analysis of a small sample of the PRV component being repaired.

The Government estimates 2 pounds of weld metal to repair the control valve, 70 pounds to repair the valve body and 2000 pounds to repair the energy dissipation chamber. Contractor shall grind surfaces to smooth contours to reduce possibility of discontinuities creating cavitation sources in the future. Carbon steel surfaces of the energy dissipaters shall be painted in accordance with C.7.1 Paint.

d. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):

- (1) Examination report and cavitation mapping
- (2) Repair plan and weld repair procedures

e. Payment.- Payment for cavitation repairs will be included at the unit price bid therefore in the schedule, Item 11, which price shall include all labor, materials and equipment necessary for volume of cavitation repaired.

C.6.13 TESTING OF REHABILITATED PRV

a. General .-- The rehabilitated PRV shall be dry tested, manually tested and load rejection tested to assure the Government of proper operation and setup of the operating linkages, dashpot re-close, control valve linkages, auxiliary space operation, general performance of the rehabilitated valve and leakage rates.

Testing shall be accomplished in 4 phases:

- (1) Dimension checks of linkages, valves, settings.
- (2) Dry-run operation without watering up the turbine, includes auxiliary space operation
- (3) Watered up PRV, manual operation of PRV control valve, check of binding, re-close rate, operation, leakage assessment
- (4) Load rejection tests, watered, turbine operational.

- b. Contractor shall develop a phased test plan similar to the pre-shutdown and pre-teardown testing of the PRV paragraphs C.6.3 and C.6.4. Each phase of testing must be witnessed and accepted by the Government before proceeding to the next test phase.
- c. Submittals - The Contractor shall submit the following in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements):
- (1) Test procedures and equipment list for operational testing
 - (2) Data Sheets with recorded measurements Phase 1
 - (3) Condition report of dry-run
 - (4) Strip chart of manual test runs with proper documentation of test conditions
 - (5) Assessment of leakage rates
 - (6) Test results of auxiliary space test
 - (7) Strip chart of load rejection test runs with proper documentation of test conditions and any as-left settings.
- d. Payment - Payment for testing will be made at the lump sum price bid therefore in the schedule, which price shall include all labor, materials and equipment necessary for testing the PRV valve and providing the required test reports.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 52.252-2 Clauses Incorporated by Reference (Feb 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address:

<http://www.usbr.gov/aamsden/rar.html>

52.211-13 TIME EXTENSION (Apr 1984)

F.2. 52.211-10 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984)

The contractor shall be required to (a) commence work under this contract within 15 calendar days after the date the contractor receives notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than March 4, 2001. The time stated for completion shall include final cleanup of the premises.

The contractor shall accomplish work based upon the following completion schedule:

Part (1). - The Contractor shall finish disassembling the PRV and remove all disassembled components under paragraph C.6.5. from the powerplant no later than November 6, 2000.

Part (2). - The Contractor shall finish reassembly of the PRV, complete all work under paragraphs C.6.6. through C.6.12. and complete final cleanup no later than March 4, 2001.

Part (3) - After the Government completes reassembling the turbine, the Contractor shall perform all phases of testing the PRV under paragraph C.6.13. no later than April 16, 2001. The Contractor shall be notified in writing 2 weeks prior to the day that the Contractor shall perform all testing of the PRV.

The completion dates stated in parts 1, 2, and 3 above are based on the assumption that the successful offeror will receive site availability as specified below.

The Government will issue written notification to the Contractor for site availability to begin the pre-shutdown activities, pre-shutdown measurements, readings and operation of the PRV, and disassembly of the PRV under paragraphs C.6.3. through C.6.5. on or before **October 2, 2000**. The Contractor will not be permitted to perform any onsite work until after the date of receipt of

the site availability letter. If site availability is delayed beyond October 2, 2000, the completion dates for parts 1, 2 and 3 of the work will be extended by the number of calendar days after ~~this~~ October 2, 2000, that the Contractor receives the receives the site availability letter. This time extension is the dole remedy for the delay in the site availability described herein. The Contractor shall not be entitled to additional payment resulting from the delay in the site availability described above.

F.3 52.211-12 LIQUIDATED DAMAGES -- CONSTRUCTION (APR 1984)

a. If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the following amounts per day for each day of delay in the completion of the respective parts of work as subdivided in the clause entitled "Commencement, Prosecution, and Completion of Work."

Part (1). - \$2,000

Part (2). - \$2,000

The maximum total liability for liquidated damages for the delay shall not exceed \$25,000.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work, together with any increased costs occasioned the Government in completing the work.

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

H.3 WBR 1452.223-81 Safety and Health--Bureau of Reclamation (Jul 1998)
Alternate I (Jul 1998)

(a) The Contractor shall not require any laborer or mechanic employed in the performance of this contract (including subcontracts) to work under conditions which are unsanitary, hazardous, or dangerous to the employee's health or safety.

(b) In addition to the requirements of the Accident Prevention clause of this contract, the Contractor shall comply with the Bureau of Reclamation "Reclamation Safety and Health Standards" (RSHS) manual.

(c) (1) The safety and health standards as referenced in subparagraph (b)(2) of the Accident Prevention clause may be obtained from any regional or area office of the Occupational Safety and Health Administration, U.S. Department of Labor.

(2) The Contractor may order the RSHS manual as referenced in subparagraph (b) above from: The Government Printing Office, Superintendent of Documents, North Capitol and H St. N.W., MS-SSMC - Room 566, Washington, D.C. 20401 (Stock item GPO-024-003-00178-3). The Contractor may also download the electronic version of the RSHS manual at no charge from the Lower Colorado Region's web site at: <http://www.lc.usbr.gov/~g3100/rshs.pdf>.

(d) The Contractor shall submit a written proposed safety program in the form and time intervals prescribed in section 2 of the RSHS manual and amendments or revisions thereto in effect on the date of the solicitation.

(e) In addition to any other provisions in the contract, the Contractor shall comply with all safety and material data submittal requirements contained in the RSHS manual and revisions thereto.

(f) The Contractor shall maintain an accurate record of, and shall report to the Contracting Officer (or authorized representative) in the manner prescribed by the Contracting Officer, all cases of death, occupational diseases, or traumatic injury to employees or the public involved, and property damage in excess of \$2,500 occurring during performance of work under this contract.

(g) The rights and remedies of the Government provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

(h) In the event there is a conflict between the requirements contained in any of the safety documents referenced herein, the more stringent requirements shall prevail.

H.4 WBR 1452.223-900 Safety Data Submittal Requirements--Bureau of Reclamation--Lower Colorado Region (Nov 1996)

(a) Within 20 calendar days from the date it receives notice of award, the Contractor shall submit the following safety data to the Contracting Officer:

(1) The Contractor's current overall Experience Modification Rate (EMR) for Workers' Compensation Insurance applicable to the type of work to be performed under the contract (e.g., tunneling, concrete dams, canals) and to the State in which the work is to be performed. In any instance where the State establishes mandatory Workers' Compensation Insurance rates that are applicable to work to be performed under the contract within that State, those rates shall be submitted in lieu of the Contractor's current overall EMR;

(2) A copy of each Log and Summary of Occupational Injuries and Illnesses (Department of Labor Form OSHA-200), or its equivalent, completed by the Contractor during the 3 calendar years immediately preceding the calendar year in which it receives notice of award; and

(3) The Contractor's death and lost workday severity incidence rate for each of the 3 calendar years immediately preceding the calendar year in which it receives notice of award.

(b) The Contractor shall report any change in its overall EMR for Workers' Compensation Insurance (or to the mandatory State Workers' Compensation Insurance rates, where applicable) to the Contracting Officer within 15 calendar days from the date it receives notice of such change from its insurance carrier or the State Workers' Compensation Fund.

(c) The Contractor shall complete a Department of Labor Form OSHA-200, or its equivalent, for the calendar year in which it receives notice of award and each calendar year thereafter, and submit it to the Contracting Officer by February 15 of the following calendar year.

(d) The Contractor shall calculate its death and lost workday severity incidence rate for the calendar year in which it receives notice of award and each calendar year thereafter, and submit it to the Contracting Officer by February 15 of the following calendar year.

H.5 WBR 1452.232-81 PAYMENT FOR MOBILIZATION AND PREPARATORY WORK -- BUREAU OF RECLAMATION (JUL 1998)

(a) General. The contract line item for mobilization and preparatory work should not exceed 5 percent of the total contract amount (see (d)(3), (4), and (5) below concerning payments exceeding 5 percent) and shall be used by the Government to make payment to the Contractor in accordance with this clause for operations including, but not limited to, those necessary for --

(1) Movement of personnel, equipment, supplies, and incidentals to the project site;

(2) The establishment of offices, buildings, plants and other facilities, at the site (excludes temporary buildings (e.g. storage sheds, shops, offices) and utilities listed in the Operations and Storage Areas clause of this contract);

(3) Payment of premiums for project bonds and insurance; and

(4) Other work and operations which must be performed or costs incurred incident to the initiation of meaningful work at the site and for which the contract does not otherwise provide for payment.

(b) Facilities and equipment covered by mobilization work.

(1) All facilities, plant, and equipment which are established at, or brought to, the site shall be deemed to be subject to the provisions of this paragraph unless the Contracting Officer specifically provides other written authorization for a particular item or items.

(2) The Contractor shall be solely responsible for the adequacy, efficiency, use, protection, maintenance, repair, and preservation of all facilities, plant, and equipment on site.

(3) The facilities, plant, and equipment covered by this paragraph shall not be dismantled or removed from the site prior to completion of the work under the contract without the written authorization of the Contracting Officer.

(c) Termination for default. Should the Contractor be terminated for default as provided by the Default clause of this contract --

(1) All facilities, plant, and equipment on the site shall be subject to the Government's right to take possession of and utilize such items for the purpose of completing the work;

(2) The Contractor shall provide evidence of encumbrances, liens, or other security interests, to the Contracting Officer; and

(3) Any encumbrance, lien, or other security interest on such facilities, plant, or equipment shall be subordinated to the Government's rights under the Default clause of this contract to utilize all facilities, plant, and equipment to complete the work under the contract.

(d) Payment. Payment for mobilization and preparatory work under paragraph (a) of this clause shall be made at the contractor lump-sum price bid for this item as contained in the Schedule. Progress payments for mobilization and preparatory work shall be made as follows --

(1) In accordance with paragraph (g) of the Payments under Fixed Price Construction Contracts clause of this contract and upon submission of a proper invoice, the Government shall reimburse the Contractor for the total amount of premiums paid for performance and payment bonds as required by the Performance and Payment Bond Requirements clause of this contract and for any insurance which may be specified by this contract.

(2) Except as provided in (d)(1) above, progress payments for mobilization and preparatory work shall not be considered a separate division of work for the purposes of progress payments and shall be subject to retainage before payment of the total amount for this contract line item.

(3) When progress payments totaling 5 percent of the total original contract amount have been made by the Government for all other work accomplished under the contract, the Government shall pay the Contractor 50 percent of the mobilization and preparatory work contract line item amount or 2.5 percent of the total original contract amount (whichever is lower) exclusive of any payment already made to the Contractor for performance and payment bond premiums and specified insurance under subparagraph (d)(1) of this clause.

(4) When progress payments totaling 10 percent of the total original contract amount have been made by the Government for all other work accomplished under the contract, the balance of the amount for the mobilization and preparatory work contract line item or 2.5 percent of the total original contract amount (whichever is lower) shall be paid to the Contractor.

(5) If the amount bid for mobilization and preparatory work exceeds the total of the payments allowed under (3) and (4) above, the balance shall be paid when the contract is substantially complete as determined by the Contracting Officer.

L.17 52.252-5 Authorized Deviations in Provisions (Apr 1984)

- (a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.
- (b) The use in this solicitation of any Department of Interior Acquisition Regulation (48 CFR Chapter 14) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

L.18 52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB
1999)

- (a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.
- (b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE	GOALS FOR FEMALE PARTICIPATION FOR EACH TRADE
	6.9% (all counties)

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

- (c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees

from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistance Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

(1) Name, address, and telephone number of the subcontractor;

(i) Employer identification number of the subcontractor;

(2) Estimated dollar amount of the subcontract;

(3) Estimated starting and completion dates of the subcontract; and

(4) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Hoover Powerplant, Boulder City, Nevada, Clark County and Mojave County, Arizona.